

| Notice of Allowability | Application No. | Applicant(s) | |
|-------------------------------|------------------------|---------------------|--|
| | 09/848,252 | TSUCHIYA, YUTAKA | |
| | Examiner | Art Unit | |
| | Andrew T Sever | 2851 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to _____.
2. The allowed claim(s) is/are 1-22.
3. The drawings filed on 04 May 2001 are accepted by the Examiner.
4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some* c) None of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

5. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) The translation of the foreign language provisional application has been received.
6. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. CORRECTED DRAWINGS must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No. _____.
 - (b) including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

| | |
|--|---|
| <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. <u>3-5</u> . | <input type="checkbox"/> Examiner's Amendment/Comment |
| <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | <input type="checkbox"/> Other |

DETAILED ACTION***Allowable Subject Matter***

1. Claims 1-22 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Independent claims 1 and 12 claim a method and measuring apparatus respectively which use mean pathlength and variance computing means and independent claims 7 and 18 claim a method and measuring apparatus respectively using second-partial-derivative-of-logarithm-of-amplitude computing step; both steps and means being used in part for calculating an absorption coefficient difference calculating means for calculating a difference between absorption coefficients at predetermined wavelengths.

Neither method/apparatus was found in the prior art.

The prior teaches measuring apparatus/methods of internal information of scattering medium, using some aspects of the present invention. For example US patent 5,694,931 to the present inventor teaches a similar apparatus/method which uses a light having two or more predetermined wavelength and then detects the light having propagated inside the scattering medium, from this a mean pathlength is calculated (see column 2 line 66 – column 3 line 23), however neither a variance nor a second-partial-derivative-of-logarithm-of-amplitude is taught to be calculated in order to calculate an absorption coefficient. US patent 6,236,871 to the applicant teaches that using the natural logarithm of amplitude in measuring internal information is also useful, however there is no teaching of using the second derivative of this natural logarithm or use of the variance.

US patent 6,335,792 to the applicant teaches a similar apparatus which does utilize variance in absorption coefficient. As claimed in claim 2 of the '792' patent the applicant claims that a weight function is a function of a mean path length and a variance of a distribution of path lengths. The '792' patent however does not claim or teach a light injecting step of injecting light of two or more predetermined wavelengths. Further the absorption coefficient difference calculating means/step of calculating is not based on a predetermined relation holding among the mean pathlength, said variance, and the difference between the absorption coefficients. The '792' patent does not teach or claim the second-partial-derivative-of-logarithm-of-amplitude claims.

Since the prior art does not teach the methods and apparatuses of the independent claims they are allowable. Claims 2-6, 8-11, 13-17, and 19-22 are dependent on claims 1, 7, 12, and 18 they are therefore also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,233,470 to Tsuchiya

US 6,240,305 to Tsuchiya

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 703-305-4036. The examiner can normally be reached M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached at 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

AS
May 27, 2003


RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800